

The impact of screen time with mobile touch-screen devices on social-emotional and behavioural skills and externalising behaviour in preschool children: a quasi-systematic review.

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Introduction & Aim

► In this digital age, preschool children are spending significantly more time using mobile touchscreen devices (MTSD) than recommended, raising concerns about the potential impact on their mental health and well-being(1,2).

► Currently, there is limited research specifically examining the impact of preschoolers' screen time with MTSD alone on their mental health, particularly in comparison to the various other forms of screen media.

► This review aims to investigate and consolidate the existing literature concerning the link between prolonged screen time on MTSD and its effects on socio-emotional and behavioural (SEB) skills, such as self-regulation skills and externalising behaviour, in preschool-aged children.

Method & Result

► A search was conducted following the PRISMA statement, resulting in 1534 references eligible for screening(Figure 1).
► Eleven studies were chosen: three were prospective cohort studies, and eight were cross-sectional studies.

► Although the synthesis results from the six studies identified heterogeneity in methods and measures used across the studies, they were in line with the Task performance and Emotional regulation within the Big Five Domains(BFD)(Figure 2).

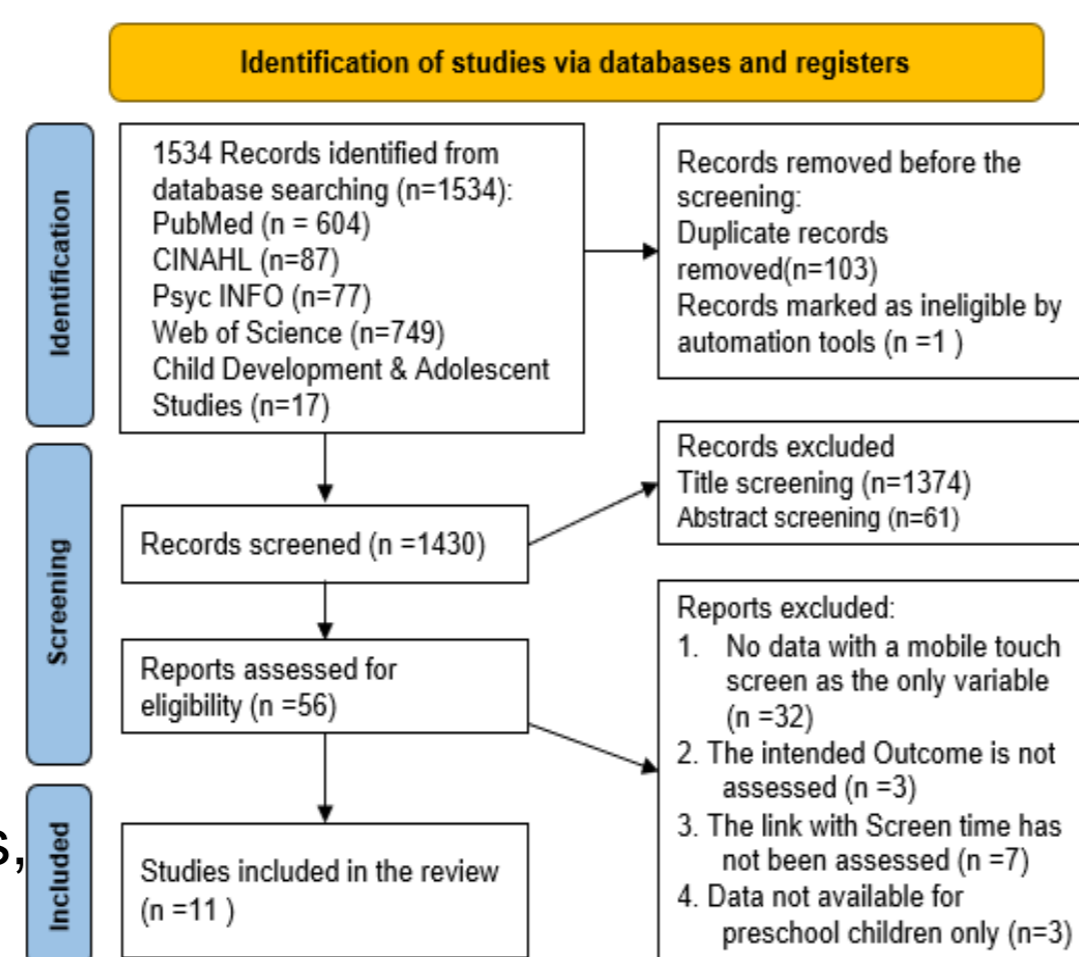


Figure 1: PRISMA flow chart for study selection(3)

Analysis

Determinants of excessive screen exposure in preschool children.

1. Parental screen time

Preschoolers whose parents with high media use tended to experience excessive screen time beyond the recommended time(6,7).

2. Socioeconomic status of caregivers

Low household income predominantly increased the odds ratio for problematic smartphone use(8). Children whose mothers had higher education levels had lower smartphone usage rates(9).

3. The Child's behavioural issues

Children who had baseline behavioural difficulties and were less integrated with fewer social contacts tended to have excessive media use.

Relationships between results and assessment tools of each study.

Table 1: The SEB skill assessed by each paper classified into the BFD.

■: Statistical significance was indicated in each study.

		Papers showed an association between the use of MTSD and impaired SEB skill					
Author	Year	Lin <i>et al.</i> 2020	Park 2021	Sari 2021	Nathanson 2018	Radesky 2023	Poulain 2018
Country		Taiwan	Korea	Turkey	USA	USA	Germany
Measures		CLST CBCL	S-scale	CBQ	CBQ	BRIEF, CBCL, CBQ	SDQ
Task performance	Achievement orientation						
	self-control	■	■	■	■		■
	responsibility		■				
	persistence	■	■	■	■		■
Emotional regulation	stress resistance	■		■		■	
	emotional control	■		■	■	■	■
	optimism	■		■		■	
Engaging with others	energy	■					
	assertiveness						
	sociability	■					■
Collaboration	empathy						
	trust						
	co-operation	■					

Prolonged use of MTSD was linked to lower proficiency in "persistence" and "self-control," both within the "Task Performance" domain, as well as "emotional control," which was within the "Emotional Regulation" domain.

Conclusions & Recommendations

► The use of MTSD by preschoolers was found to be influenced by the methods and duration of parental MTSD use, as well as parental beliefs and attitudes towards MTSD.

► When MTSD replaces social and parent-preschooler interactions, children may be deprived of natural opportunities to develop self-control skills, which may increase the risk of later declines in self-control and emotional control skills.

► The logic model was recommended(Figure 3), based on information obtained from the asset-based health needs assessment, to provide interventions for parents to reduce problematic MTSD use in preschool children.

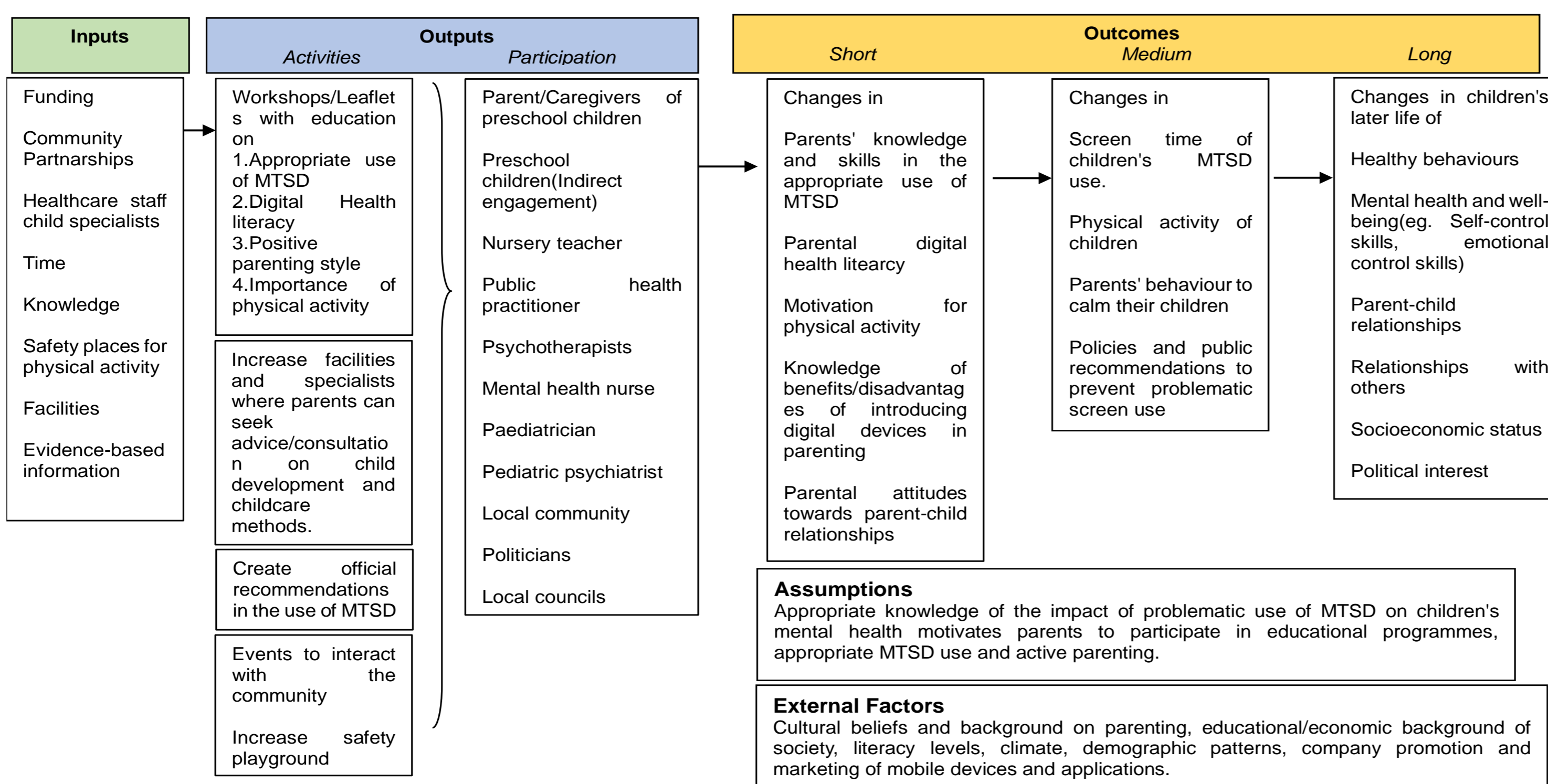


Figure 3: The programme used a logic model aimed at parents/caregivers to prevent problematic use of MTSD for preschool children

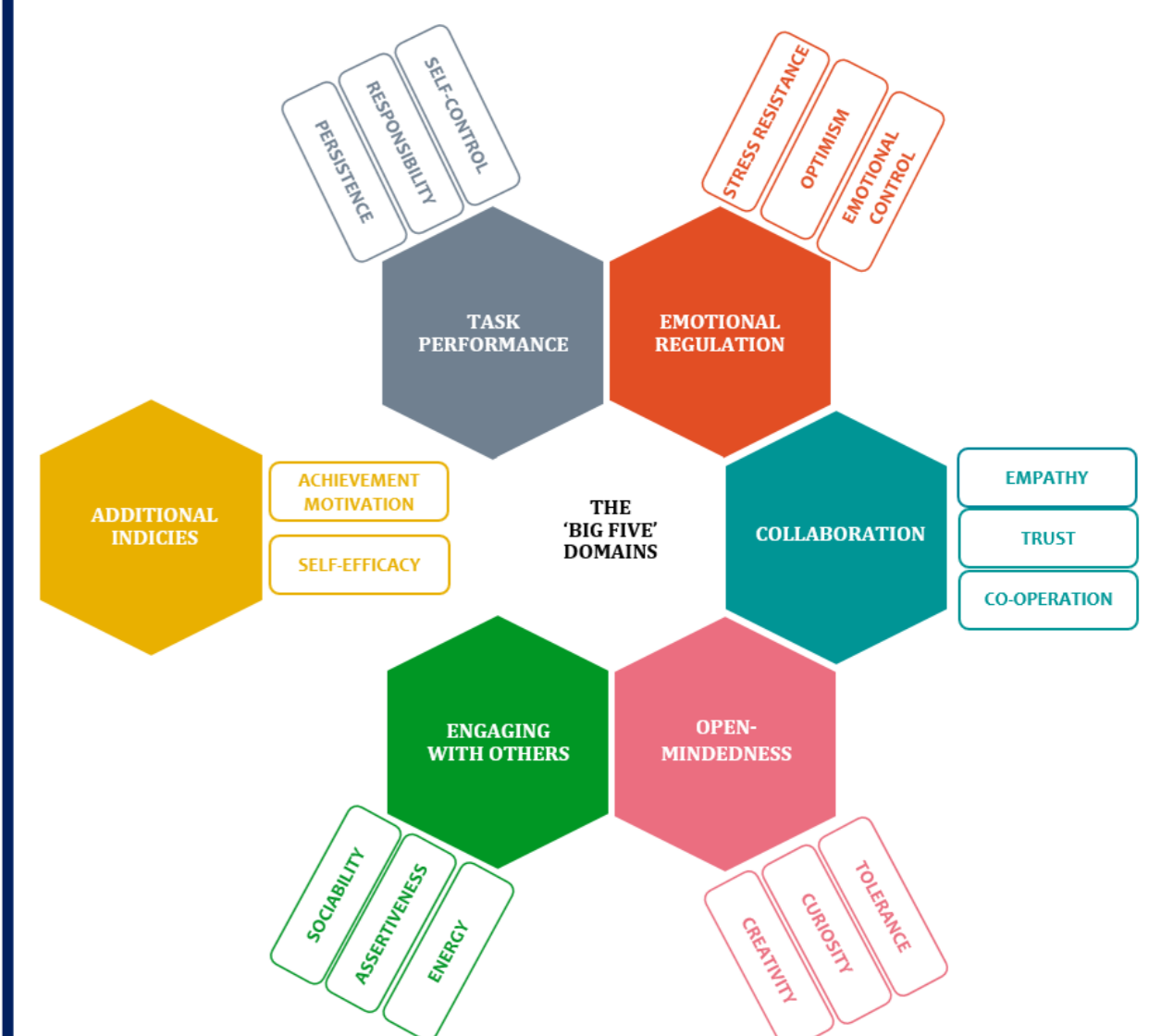


Figure 2: The Big Five Domains(10)

Abbreviations

MTSD: mobile touch-screen device, SEB skill: Social-emotional and behavioural skills, BFD: the Big Five Domains.

References

- (1) Victoria Rideout, M. A. (2020) *The Common Sense Census: Media Use by Kids Age Zero to Eight*. The Common Sense Census. San Francisco: Common sense media (Accessed: 12 November 2023).
- (2) AAP (2016) 'Media and Young Minds', *Pediatrics*, 138(5)
- (3) Page, M. J. *et al.* (2021) 'The PRISMA 2020 statement: an updated guideline for reporting systematic reviews', *BMJ*, pp. n71.
- (4) CASP (2022) *CASP cohort study checklist*. Critical Appraisal Skills Programme
- (5) Downes, M. J. *et al.* (2016) 'Development of a critical appraisal tool to assess the quality of cross-sectional studies (AXIS)', *BMJ Open*, 6(12), pp. e011458.
- (6) Chaibal, S. (2022) 'The association between smartphone and tablet usage and children development', *Acta Psychologica*, 228.
- (7) Schwarzer, C. (2022) 'Associations of media use and early childhood development: cross-sectional findings from the LIFE Child study', *Pediatric Research*, 91(1), pp. 247-253.
- (8) Park, J. H. (2021) 'Smartphone use patterns and problematic smartphone use among preschool children', *Plos One*, 16(3).
- (9) Sari, B. A. (2021) 'Screen media exposure in pre-school children in Turkey: the relation with temperament and the role of parental attitudes', *Turkish Journal of Pediatrics*, 63(5), pp. 818-831.
- (10) OECD (2018) *Social and emotional skills: Well-being connectedness and success*(Accessed: 9 December 2023).